

Commonwealth of Massachusetts
Department of Telecommunications and Energy
Fitchburg Gas and Electric Light Company
Docket No. D.T.E. 02-24/25
Record Request Response

Record Request No.: DTE-RR-22

In what instances does FG&E allow single-phase motors exceeding 5 horsepower to be on the residential Rate R-1, and how long this phrase has been in the "Availability" clause.

Response:

FG&E allows single-phase motors exceeding 5 horsepower to be on the residential Rate RD-1 as long as the installation does not negatively impact the quality of service to other customers. There are no restrictions on size, other than those associated with quality of service considerations.

The purpose of this clause in the tariff is to ensure that there is a technical review of the electrical current (and associated voltage drop) that occurs during motor starting. As explained by FG&E's engineers, the evaluation of "voltage flicker" is a commonplace analysis for new motor installations. The concern arises when a motor is first started, because the rotating part of a motor is initially at rest and must overcome its own inertia as it accelerates up to speed. To accomplish this, the motor draws high current for a brief period of time, resulting in a voltage drop that can cause problems or nuisance for other customers.

In a residential home, this situation might be seen as the dimming of lights that occurs when the refrigerator starts. For larger motor sizes, this same "dip" in voltage can occur on the FG&E system and be seen by other customers, possibly leading to complaints. For sizes above 5 HP, engineers perform a motor starting calculation to determine if the level of "voltage flicker" will result in aggravation or problems for other customers. If there are concerns with motor starting, it may be necessary for the customer to install some type of starting equipment to ensure that other customers are not negatively impacted.

The phrase "Single-phase motors exceeding 5 horsepower will be allowed only upon approval by the company in each instance" has been in the FG&E Electric Division Tariff since Feb. 1, 1985. Prior to Feb. 1985 (and continuing back prior to 1970), the availability language included the phrase "and includes the operation of single phase motors not exceeding 5 horsepower in any one motor and having such characteristics and so operated as not to impair service to other customers."

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